CLAIMS

1.   A method for synchronizing corresponding landmarks among a plurality of images of an object, said method comprising:

creating at least a first one dimensional digital profile map of a first image and a second one dimensional digital profile map of a second image, wherein said first and second images are based on a two, three, or four dimensional digital representation of an object;

identifying a first reference point in at least a first image of an object in said first image and a second reference point in said second image, said first reference point corresponding to said second reference point;

identifying landmarks in at least said first and second one dimensional digital profile maps;

equating at least one landmark from said first one dimensional digital profile map with at least one corresponding landmark from said second one dimensional digital profile map; and

registering said corresponding landmarks among each one dimensional digital profile map using said first and second reference points.

2.   The method of claim 1, further comprising storing said corresponding landmarks.

3.   The method of claim 1, further comprising:

displaying said first and second images;

selecting a location in said first image; and

forward mapping an indicator location on said first image to a corresponding location on said second image.

4.   The method of claim 1, further comprising creating a two, three, or four dimensional digital representation of said object from at least one of said first and second one dimensional digital profile maps.

5.   The method of claim 1, wherein said identifying step further comprises identifying landmarks in at least said first and second one dimensional digital profile maps based on predetermined shape or density information corresponding to various locations on said object.

6.   A method for synchronized viewing of a plurality of images of an object with corresponding landmarks, said method comprising:

synchronizing corresponding landmarks between said first image set and said second image set;

displaying an indicator for at least a first location in said first image set;

determining a second location in said second image set, wherein said second location corresponds to said first location; and

displaying an indicator for said second location in said second image set.

7.   The method of claim 6, wherein said object to be viewed is a human body, and said first and second image sets are computerized tomography scans, at least one image set being a prone scan of the human body and at least one image set being a supine scan of the human body.

8.   The method of claim 6, wherein said landmarks are folds of a human colon.

9.   The method of claim 6, wherein said object to be viewed is a human colon, and said first and second image sets are computerized tomography scans, at least one image set being a prone scan of the human colon and at least one image set being a supine scan of the human colon.

10.   The method of claim 9, wherein landmarks of said prone scan are synchronized with corresponding landmarks of said supine scan.

11.   The method of claim 10, wherein a plurality of images including corresponding landmarks between a plurality of prone scans or a plurality of supine scans may be viewed together.

12.   The method of claim 10, wherein a plurality of images including corresponding landmarks of at least one prone scan and at least one supine scan may be viewed together.

13.   A system for synchronizing a plurality of image sets of an object using corresponding landmarks, said system comprising:

a reference point identification unit for use in identifying a first reference point in at least a first image in a first image set and a second reference point in at least a second image in a second image set, said first reference point corresponding to said second reference point;

a dimension converter unit for use in creating at least a first one dimensional digital profile map of said first image and a second one dimensional digital profile map of said second image using a data projection, wherein said first and said second images are based on a two, three, or four dimensional digital representation of said object;

a landmark identification unit for use in identifying landmarks in at least said first and second one dimensional digital profile maps;

a correlation unit for use in equating at least one landmark from at least one dimensional digital profile map with at least one corresponding landmark from second one dimensional digital profile map; and

a registration unit for use in registering corresponding landmarks among each one dimensional digital profile map using said first and second reference points.

14.   The system of claim 13, further comprising:
an image display unit for displaying said image sets;
an operator console unit for interaction with the image display unit;
a display forward mapping unit for creating a one dimensional projection; and
a display inverse mapping unit for creating a two, three, or four dimensional projection.

15.   The system of claim 13, wherein said landmark identification unit comprises identifying landmarks in at least said first and second one dimensional digital profile maps based on predetermined shape or density information corresponding to various locations on said object.

16.   The system of claim 13, wherein said dimensional converter unit further converts said one dimensional digital profile maps into a two, three, or four dimensional digital representation of said object.

17.   The system of claim 13, further comprising a memory for storing said corresponding landmarks.

18.   The system of claim 13, wherein said first image set contains a first image selected for output on a display.

19.   The system of claim 13, wherein said second image set is searched for a second image having corresponding landmarks to said first displayed image and said second image is displayed on an display unit.

20.   The system of claim 13, wherein said object to be viewed is a human colon, and said first and second image sets are computerized tomography scans, at least one image set being a prone scan of the human colon and at least one image set being a supine scan of the human colon.

21.   The system of claim 20, wherein landmarks of said prone scan are synchronized with corresponding landmarks of said supine scan.

22.   The system of claim 13, wherein said registration unit further moves a first indicator to a first point in said first displayed image and automatically moves a second indicator to a second point in said second displayed image, said second point corresponding to said first point.

23.   The system of claim 13, wherein the forward dimensionality converter unit creates a one-dimensional digital profile map using data projection methods.

24.   The system of claim 23, wherein the data projection method comprises at least one of mean projection, median projection, maximum projection, and minimum projection.

25.   The system of claim 13, wherein the display inverse mapping unit further comprises:
        a landmark elasticity measurement unit; and
        a matching unit.

26.   The system of claim 25, wherein the matching unit includes a circular one-dimensional signal correspondence methods, said one-dimensional signal correspondence method comprising at least one of maximum correlation measure, mutual information measure, and minimum difference.

27.   A computer executable program for synchronizing corresponding landmarks among a plurality of images of an object, said program comprising:

accessing at least a first image of an object in a first image set and at least a second image of said object in a second image set;

identifying at least a first reference point in the first image of the object in the first image set and at least a second reference point in the second image of said object in the second image set, said first reference point corresponding to said second reference point;

creating a one dimensional digital profile map of said first image and a one dimensional digital profile map of said second image wherein the first and the second images are based on a two, three or four dimensional digital representation of said object;

identifying landmarks in said first and second one dimensional digital profile maps based on predetermined shape or density information corresponding to various locations on said object;

equating at least one landmark from said first one dimensional digital profile map with at least one corresponding landmark from second said one dimensional digital profile map; and

registering said corresponding landmarks using said first and second reference points.

28.   The computer executable program of claim 27 comprising:

displaying said first image of an object on at least one electronic screen;

interacting with said first image of an object using an operator console unit;

mapping an indicator location on said first image to a corresponding location on said second image;

displaying said second image of an object on at least one electronic screen.